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Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A plug-in connector for connecting and transmitting signals in a form of light beams from a circuit board to a back plane, wherein the plug-in connector comprises:

a) means for transmitting optical signals into the plug-in connector in the form of a plurality of glass fiber lines;

b) at least one mirror having a first side adjacent to the back plane and an opposite side adjacent to the circuit board, said at least one mirror being coupled to said transmitting means for deflecting light beams at an approximately 90° angle in the plug-in connector;

c) a lens system disposed adjacent to said first side of said mirror and coupled to said transmitting means, for coupling the light beams into the plug in connector; -

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wherein said at least one mirror, said lens system and said plurality of glass fiber lines are coupled together in an input plane of said plug; and

wherein said plug-in connector is formed as two symmetrical halves having a center plane extending along a plane for transmitting optical signals.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The plug-in connector as in claim 1, wherein said means for transmitting optical signals comprises a plurality of prisms, wherein said light beams always run within a same optical medium within said plug-in connector.

5. (Canceled)

6. (Previously Presented) The plug-in connector as in claim 1, further comprising a plug in coupler for coupling said plug-in connector to the circuit board.

7. (Previously Presented) The plug-in connector as in

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claim 1, further comprising a clip for coupling said plug-in connector to the circuit board.

8. (Previously Presented) The plug-in connector as in claim 1, further comprising a plug in coupler for coupling said plug-in connector to the back plane.

9. (Previously Presented) The plug-in connector as in claim 1, further comprising a clip for coupling the plug-in connector to the back plane.

10. (Canceled)

11. (Previously Presented) The plug-in connector as in claim 1, further comprising a light seal disposed in an in-coupling point of the optical signal into the plug-in connector.

12. (Currently Amended) A plug-in connector for connecting and transmitting signals in a form of light beams from a circuit board to a back plane, wherein the plug-in connector comprises:

a) at least one optical conductor for conducting data in the

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form of optical signals into the plug in connector, said at least one optical conductor in the form of a plurality of glass fiber lines;

b) at least one mirror having a first side adjacent to the back plane and an opposite side adjacent to the circuit board,  
said at least one mirror being coupled to said transmitting means  
for deflecting light beams at an approximately 90° angle in the plug-in connector;

c) a lens system disposed adjacent to said first side of said mirror and coupled to said transmitting means, for coupling the light beams into the plug in connector;

wherein said at least one mirror, said lens system and said plurality of glass fiber lines are coupled together in an input plane of said plug; and

wherein said plug-in connector is formed as two symmetrical halves having a center plane extending along a plane for transmitting optical signals.

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13. (New) A plug-in connector for connecting and transmitting signals in a form of light beams from a circuit board to a back plane, wherein the plug-in connector comprises:

a) at least one optical conductor for conducting data in the form of optical signals into the plug in connector, said at least one optical conductor in the form of a plurality of polymer lines;

b) at least one mirror having a first side adjacent to the back plane and an opposite side adjacent to the circuit board, said at least one mirror being coupled to said transmitting means for deflecting light beams at an approximately 90° angle in the plug-in connector;

c) a lens system disposed adjacent to said first side of said mirror and coupled to said transmitting means, for coupling the light beams into the plug in connector;

wherein said at least one mirror, said lens system and said plurality of polymer lines are coupled together in an input plane of said plug; and

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wherein said plug-in connector is formed as two symmetrical halves having a center plane extending along a plane for transmitting optical signals.

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